



Anna Seliskar
2740 Monterey Ave
Soquel, CA 95073-2806

4/21/03

Dear Mr. Ellen Wagner,

I was unable to attend the April 12 public meeting, regarding the Forest of Nisene Marks plan. I do have some major concerns for the park.

1. There are mountain bikers who abuse the privilege of riding their bikes. They speed past walkers - & are a real danger to hikers.

2. Their presence greatly disrupts the peace & serenity of those who wish to enjoy the many natural beauties which surround them in Nisene Marks park.

3. The original deed did not address mountain bikers - because they did not exist at the time

RECEIVED

APR 28 2003

NORTHERN SERVICE
CENTER

that the deed was written up.

I feel that the Marks family intended the park to be an oasis of serenity & not to be abused by bikers speeding up & down the trails.

I feel that a compromise would be to let bikers stay on the main fire road or roads. They should not be allowed on any single-track trails.

I sincerely hope that you & your staff give their very serious consideration & hope that you are able to make decisions - based on the wishes of the Marks family - as well as all who wish to

preserve the place, serenity, & safety of the park for now & the future years yet to come.

Thank you for caring,
Anna Schick & Dan Schick

April 24, 2003

California State Parks
Northern Service Center
ATTN: Ellen Wagner
P.O. Box 942896
Sacramento, CA 94296-0001

RECEIVED

APR 28 2003

NORTHERN SERVICE
CENTER

Dear Ellen,

RE: General Plan for Nisene Marks

Please take into consideration accessibility to Nisene Marks State Park by people who may have difficulty walking. I know a man who was hit by a drunk driver and lost his leg. He has difficulty walking, but can easily ride a bike to access the beauty of the park. I know another man who has Polio in both legs. He also has difficulty walking, but can easily ride a bike. I have nerve damage in both legs, due to totaling a car with my body. The impact of hiking causes me severe pain, but I can easily ride a bike pain free. Please support the development of shared multi-use trails throughout the park and allow everyone to enjoy the beauty of nature.

42

I believe we can all learn to share the trails of Nisene Marks State Park by practicing trail etiquette. The State Park can participate in this education, teaching users to be courteous to one another. Responsible Organized Mountain Pedalers (R.O.M.P.) <http://www.romp.org>, has guidelines and activities for educating the public on these issues. We all love Nisene Marks State Park and want to share its natural beauty. I am sure we can work together to allow everyone equal access.

RE: Public Meeting on Saturday April 12, 2003, Mar Vista Elementary School, 6860 Soquel Drive, Aptos, CA 95003 10:00am- - 12:00 noon

I attended this meeting and felt that cyclists were under-represented due to the fact that the largest cycling event in the United States took place at the exact same time about 45 minutes away at Laguna Seca in Monterey. 50,000 cyclist attended the Sea Otter Classic this year. I hope this was merely an oversight in scheduling this meeting, but I can't help but wonder if it was done intentionally. I was the only person that rode a bike to the meeting, missing the greatest local cycling event to attend. I felt that the future of Nisene Marks State Park was of utmost importance. Please take into consideration any conflicts in the future when scheduling these meetings.

Thank You,

Eliece Horton, 805 Valencia Road, Aptos, CA 95003-9754

NEWS RELEASE

August 16, 2001

BIKING NO WORSE FOR ENVIRONMENT THAN HIKING, NEW STUDY SHOWS

Mountain bikes are no more harmful to the environment than hiking, according to a new study by a University of Guelph professor.

Botanist Richard Reader and graduate student Eden Thurston say hikers have long argued that the deep treads of spinning mountain bike tires tear up more dirt than a simple pair of hiking boots. But their study of trail use found that with average amounts of activity, cycling and hiking have similar effects on the great outdoors. Their study is one of only a few ever conducted on trail use in North America. "Very little research has been done on the physical effects of mountain biking on the environment," Reader said. "But we've found that hikers have the same affect as bikers do, regardless of the number of trips along the path."

Environmental damage to areas along recreational trails from everyday use is a common problem faced by managers of natural areas. When trails start showing signs of stress and degradation, sharing the trail puts some hikers and mountain bikers at odds, Reader said. For the study, cyclists and hikers were asked to walk or ride down a four-metre-long track with no existing trail in Ontario's Boyne Valley Provincial Park. The impact on vegetation cover and soil exposure was measured at five different intensities of bike and foot traffic: zero, 25, 75, 200 and 500 passes (trips along a specific trail). According to the data, the first 25 passes were the most — and equally — damaging for both hiking and cycling, greatly reducing vegetation cover and exposing the soil.

Despite the damage done by the 500-pass trials, the recovery rate one year later was almost 100 per cent. Reader said this means damage caused by both hikers and bikers is reversible if management decisions are made to allow the trails to rest and recover. But he cautions that behaviour and attitude are still vitally important for trail preservation. "In our trial, the behaviour of participants was controlled to simulate the average user, so when the same responsible behaviour is followed, there is no difference in impact. But if hikers and cyclists don't exhibit the same behaviour, then these rules don't apply."

Reader adds that in the past, bikers have been blamed for increased signs of trail wear and tear because theirs is the newer activity. "In reality, both are equally damaging to the environment, but there is increased trail wear because twice the number of people are now using the trails."

- 30 -

Contact:

Prof. Richard Reader,
Department of Botany
(519) 824-4120, Ext. 3593

For media questions, contact
Lori Bona Hunt,
media relations officer,
(519) 824-4120, Ext. 3338.

RECEIVED

MAY 05 2003

Ellen Wagner
California State Parks, Northern Service Center

NORTHERN SERVICE
CENTER

Dear Ms. Wagner,

I have read the Preliminary General Plan/Draft Environmental Impact Report for the Forest of Nisene Marks State Park, and noted the three alternative plan maps.

I request that the Mangels Ranch area be designated as a Potential Nature Study Site or as a Potential Nature Trail Site. 43

Preferred plan B shows three "potential sites": one, an educational facility developed with Cabrillo College, which appears to be just behind the college, so not within park boundaries; two, a visitor center, and three, a camping site.

At the April 12, 2003 public meeting a question was raised as to why these "potential" sites were included in the plan. I understood the answer to be that by putting these sites into the general plan now there would not have to be an amendment made to the plan if, in the future, these potential sites could be developed. 44

The lower part of the park, being adjoined to urban development, has been given a high intensity use designation. The Mangels Ranch acquisition is part of this high intensity designated area. I fear that the designation will mean the use of the Mangels Ranch area by mountain bikers, skate boarders, possible future electric motorized bikes, and equestrians. The land is too erodible for such use.

On the shaded eastern slopes of this acquisition, along Mangels Gulch and up the little valley that has a tributary seasonal water flow into Mangels Creek, the old dirt road became narrowed by vegetation in many areas, and the narrow trail that resulted has been rutted by bike and horse use so that it is only usable, with care, on foot. In one place a washout has taken away land almost to the boundary line so that there is only room for a foot trail.

A foot trail is indicated on preferred plan B. Plan C shows a "shared use" trail, which indicates access to mountain bikes and horses. I fear that if the Mangels area is not designated and protected as a Potential Nature Study Site or Potential Nature Trail Site in the General Plan then Plan C's "shared use" trail may be used, even though Plan C is not the "preferred plan".

The soil in this area cannot take bike and horse use without having constant, intensive and costly maintenance every year.

The other slopes on the drier western side of the hills are not as grown in and narrowed, but this is, like all the Mangels Ranch area acquisition, steep slope country with highly erodible soils. Mountain bikes on it would pose a safety problem because of their down hill speed. Horses on it would cause erosion ruts which would destroy the trails.

Foot trails are the only feasible kind of use for the Mangels Ranch area.

The area, being so close to urbanization, and to the potential visitor site, would be an excellent site for a self-guided nature trail, for use by

conservation education groups, bird watchers, natural sciences researchers, etc. as well as simply being accessible to users who want an undisturbed contemplative experience in natural surroundings.

Having lived next to the Mangels Ranch area and observed it for over forty years, I know what it has to offer to those of us who find pleasure in nature. For example, there is a hillside which has not been grazed for decades and has a rare expanse of the California State Grass, Purple Needlegrass. Next to it, as noted in the General Plan, is a former hillside horse pasture which was grazed very heavily up to the time the State acquired the Mangels area. It looked almost bare, but the Needlegrass roots and seeds were still there, and over a few years the grass has succeeded and is lush. Presently it is sprinkled throughout with Blue-eyed grass, Golden Brodiaea, and Filaree.

These hillside meadows are a potential to thrill seeking mountain bikers who would love to use them as skiers use slopes of snow. Thrill seeking skate boarders are presently using the steep and eroded drops made illegally by mountain bikers in Nisene Marks Park, and would use these Needlegrass slopes. Also they would be attractive to grass sledders who like to slide down grassy slopes on large pieces of cardboard. Needlegrass is prime fodder, and unknowing equestrians might find it appealing to let their horses have something to eat there. The Plan suggests that horse manure may have enhanced the present re-growth of Needlegrass which seems more lush on the former horse pasture than on the adjoining non-grazed area. However, the impact of the intensive grazing had destroyed the natural aesthetic of the hillside, as well as endangering the continuing presence of the Needlegrass which has been supplanted by non-native annual grasses in so many areas continually grazed by non-native animals.

There is the problem of feral pigs, as noted in the General Plan. Wild pigs have been enjoying their wallows in the Mangels area this wet springtime, and they have started rooting in the Needlegrass fields as well as in other places nearby.

Again, my request is to have the Mangels Ranch Area designated as a Potential Nature Study or Nature Trail Site. This would perhaps assure that the area would be limited to foot trails and, if feasible, to trails usable by wheel chairs, and that mountain bikes, skate boards, grass sleds, electric motorized bicycles, and horses would be excluded.

Sincerely,

Patricia Rayne

Patricia Rayne

735 Cathedral Drive Apr. 30, 2003

Aptos CA 95003-3408

(831) 688 3792

POR. APTOS RANCHO

SECS. 182, T11S., R1W., & SECS. 687 T11S., R1E., M.D.B. & M. PROJECTED.

Tax Area Code
69-048 69-041
69-065

40-10
1992

Before acquisition
by the State

FOR TAX PURPOSES

ONLY Y

Forest of Marks
Nisene Park
State Park

IMBER PRESERVE
ZONE

83-RS-47
2-21-91

SEC 7 R/E
SEC 12 R/W
Bk. 39

INSERT

For Continuation
Don't forget this sheet

Note- Assessor's Parcel Block & Lot Numbers Shown in Circle.

Assessor's Map No. 40-10
County of Santa Cruz, Calif.
Nov. 1951

1501

Rich Apple
1682 Colony Way
Santa Cruz, CA
95062
apple@richapple.com
April 25th, 2003

California State Parks Northern Service Center
Attn: Ellen Wagner
P.O. Box 942896
Sacramento, CA 94296-0001

RECEIVED

MAY 05 2003

NORTHERN SERVICE
CENTER

Dear Ms. Wagner,

These are my written comments regarding The Forest Of Nisene Marks State Park Preliminary General Plan/Draft EIR. It seems my comments fall into two categories, the first being actual suggestions for bettering the text of the plan, and the second being general comments about the plan and my reasoning against the plan's interpretation of the applicable deed restrictions which will allow mountain bikes on the single-track trails above the Soquel Augmentation Line (popularly approximated as where the steel bridge of Aptos Creek Road spans Aptos Creek, though it technically is up the road a bit).

Suggestions For Bettering The Text

This category in and of itself might seem ludicrous because in general the text of the plan is so very well written. As I understand it, this is perhaps not in keeping with the typical, dry approach to such bureaucratic documents, and the readability and color in the plan is indeed thanks to Santa Cruz's own very popular historian, Sandy Lydon. I do find this aspect enjoyable, humanizing, and wonderful to read.

1. One important aspect is left out of the historic recap in the Existing Conditions and Issues section that begins on page 5. Somewhere around page 49 in the "The Forest of Nisene Marks State Park – 1983 – present" section there should be an accounting of how the deed restrictions were interpreted to not include mountain biking on the trails above the Soquel Augmentation Line. For as much well-written, detailed history that is included, such an omission has the appearance of "spin". The "no bikes" interpretation of the deed was indeed made in the mid '80s and accounts for the existing rules restricting mountain bikes on all trails above the Soquel Augmentation Line to this very day, so that fact and how such rules were arrived at should be included here. 45
2. On page 67 (still under Existing Conditions and Issues) there is a further reference to biking being allowed on designated trails. At that point in the document it should also be noted that none of the trails currently designated as legal for biking are within the area covered by the deed restrictions. Again, I see not specifying such in this incredibly otherwise thorough narrative as being politically slanted to camouflage the current interpretation of the deed as a means to distract from the controversial issue of State Parks reinterpreting the deed differently for the new plan. 46
3. On pages 73 and 74 under Existing Conditions where the Deed Restrictions are discussed, I take great exception to a blatant misrepresentation of the facts regarding the use of the term "natural preserve" in the deed and how the narrative style of the plan serves to rob the significance of what were probably very specific, carefully chosen words in the deed.

The plan says: It does not incorporate the definition of “natural preserve” as specified in the Public Resources Code (Section 5019.71), which was not adopted until 1978, some thirteen years after the deeds were recorded.

I do not have full access to be able to completely research the full history of the Public Resource Code, but I was able to find that Section 5019.71 from 1978 had as a predecessor the 1971 code of Section 5001.5. Being that Section 5019.71 was a fine tuning of Section 5001.5, I’m certain that further language in Section 5001.5 was replaced by Section 5019.71, and it would have been in that prior portion of Section 5001.5 or accompanying notes that the term “natural preserve” was first defined. Evidence of this is that Section 5001.7 regarding airport facilities (must have been fairly close to 1971 or so being that it’s just a couple decimal digits beyond 5001.5) does use the land use designation of “natural preserve” in its text, along with the other land use designations of “state wilderness”, “state reserve”, and “cultural preserve”.

Therefore the plan should not include this misleading implication that “natural preserve” was not adopted until 1978. 1978 is simply the year that the currently written definition of that designation was adopted, and it is most likely that the designation was first adopted in 1971. 1971 is of course still a number of years after the deed was written, but the smaller span of time does serve to bolster the probability that the use of the term by the Nature Conservancy was indeed accurate for its intended meaning being in line with what was eventually adopted by the state. I would be surprised if the exact term adopted by the state was not for the most part defined at the time by such organizations as the Nature Conservancy.

4. Another problem I see in the plan has first to do with its well written definition of “Low Allowable Use Intensity” (page 101), with a wonderful case being made for what is so special in the areas recommended for “Low Allowable Use Intensity”, how delicate and pristine the resources are, and how important it is to fully protect such resources. The “Activities” listed for this use intensity level (beginning at the bottom of page 102) are entirely in line with the respect and protective fervor expressed in the narrative description of the category, and that list (correctly, I think) does not include the highly recreative sport of mountain biking. Surely after all the talk in this use intensity designation about the “steepest slopes and most erodible soils” and the resources “that are especially vulnerable to impacts from activities and development”, including biking as an activity would look ridiculous.

The problem is, however, that later, when the “Low Allowable Use Intensity” concept is applied to an actual “Land Management Zone” called “Resource Protection and Low Intensity Recreation” (page 110), the land sensitivity issues so eloquently described previously are painted with broader, less particular strokes, and suddenly, there in the narrative list of activities, appears “biking”.

I very much think that “biking” should be very completely removed from the listed “visitor experience and recreation opportunities” for this “Low Intensity” Land Management Zone.

My General Comments About Decisions And Choices In The Plan

“Natural Preserve” Designation Belongs In The Plan

The general plan development process that has been shared with the public via a series of public meetings has each step of the way “softened” its proposals in terms of protecting the land and honoring the deed’s requirement that it be “preserved for all time as a natural preserve”. Even putting aside the official land designation aspect of the words “natural preserve”, the very

clear meaning of this phrase in the deed (along with all of the accompanying text of the deed) points to the donor's intent that the land be left in its natural state with all attempts made to limit access to just those activities that are the least likely to hurt the land.

As each series of proposed plans (A, B, and C) has been presented at each public meeting, the strictness of the land use categories has diminished, and now we don't even have the land use designation of "natural preserve" in any of the 3 options. The reason given for this in the April 12, 2003 public meeting was that the land is not "unique" so as to set it apart from other areas of the Santa Cruz mountains.

In reading the current definition of "Natural Preserves" (PRC 5019.71) I do not even see the word "unique". What I see is "outstanding natural or scientific significance", and that certainly does describe Nisene Marks. In addition, I feel that the land is unique and special in that it, as opposed to most of the Santa Cruz mountains, is set aside for the public. The fact that it was previously logged in parts does not detract from the land having (and this is from PRC 5019.71) "representative examples of plant and animal communities existing in California prior to the impact of civilization, geological features illustrative of geological processes, significant fossil occurrences or geological features of cultural or economic interest, or topographic features illustrative of representative or unique biogeographical patterns." (oops - there is one "unique")

49

Further, the deed itself requires that the land be preserved in a manner analogous to what the State has defined as "natural preserve". The deed does not say that such is later open to interpretation by the State based on qualifications it deems fit to place different public lands into different land use categories. In effect, the deed says the State shall be a steward of the land as long as it respects the choice that the Marks family made in choosing what that land category shall be. "Natural Preserves" in the current land designation sense exactly fits the tone and specifics of what the deed expressed.

I have too great a respect for words to accept the argument of the State Park plan developers that the Nature Conservancy and the Marks family's meaning behind "natural preserve" in the '60s was not the same meaning found in those words when they were adopted as a land use designation in 1971. (My point number 3 in the first section of this letter addresses how the 1978 adoption year of "natural preserve" by the State included in the plan is incorrect.)

The Current Restriction Against Bikes On The Single-track Trails Above The Steel Bridge Should Remain In The Plan

50

Mountain biking is not specifically mentioned in the deed as being restricted from the trails above the Soquel Augmentation Line, but that is because mountain bikes didn't exist when the deed was written. Mountain skateboarding, mud-sledding, and whatever other future highly recreative activities have yet to be invented were not specifically mentioned either. Along with all the other deed text about preserving and caring for the land, the following words were given to indicate the nature of activities that would be appropriate: That the use of the Property shall be limited to camping, nature study, hiking, and associated activities.

Mountain biking is a fun, exhilarating sport. It can be gentle and slow, as you often see with families riding along the fire road in Nisene Marks where mountain bikes are currently permitted. But on the steep, winding, single-track trails in the deed restricted area above the steel bridge, mountain biking is almost always at it's most exhilarating – in short, a thrill sport.

Mountain biking on the single-track trails in Nisene Marks is to "camping, nature study, and hiking" what a tidal wave would be to a quiet walk on the beach. Reading, photography, jogging – these are activities associated to "camping, nature study, and hiking". For the State to

rule that mountain biking should be allowed as an “activity” associated to camping, nature study, and hiking seems just so strange to me. It’s like someone taking an IQ test and failing the association test where one is given a group of things (say “an orange, a cantaloupe, a block of wood, and a tomato”) and cannot identify the one item in the series that doesn’t belong.

In the plan (page 46) reference is given to interviews with Herman Marks and his realtor in the late ‘70s. The plan states: both Herman Marks and the realtor, Don Thompson, explained that the Marks family had nothing against horses per se, but that they were concerned about the damage that horses might do to the hiking trails in the Park.

First, note “hiking trails”. They were saying that they were concerned about potential damage to “hiking trails”. In the late ‘70s mountain bikes were perhaps becoming a glimmer in some peoples’ eyes, but even still the donor himself was defining the trails as being for “hiking”.

This paraphrasing of what was said in interviews illustrates another big factor for not allowing mountain bikes on the single-track trails above the steel bridge in Nisene Marks – damage to the trails and to the environment. Mountain bikes harm the trails and hurt the fragile environment such as that found in Nisene Marks in amounts exponentially greater than does hiking, and perhaps even moreso than does horseback riding. Anyone who hikes and sees this damage, especially in places where mountain bikes run rampant such as the single-track trails in Wilder Ranch or Gray Whale Ranch in Santa Cruz, can attest to this fact. Our mountains usually and hopefully get a lot of moisture, and that means mud, and while mud plus anything (hiking included) can mean erosion and damage, mud plus biking reduces trails to sorry ruts that become almost impossible for hikers to negotiate.

Of course “biking” will be an issue in my next topic of “Public Safety”, but for now the last of my words imploring State Parks to honor the deed and not allow mountain bikes on the single-track trails above the steel bridge in Nisene Marks is simply to say how much biking ruins the experience of hiking for which the Marks family seemingly most wanted the land preserved. The trails in Nisene are steep, winding, and narrow. This means that the typically aggressive mountain biker who is the type to ride those trails (and yes, of course plenty currently ride the trails illegally) is coming out of nowhere, riding fairly fast, and often scares the absolute bejesus out of a hiker enjoying the quiet and solitude of the trail.

What would Henry David Thoreau think?

Much is made of the overall plan to have “shared-use” trails, but as has been said by many hikers, “shared-use” really boils down to “mountain bikes only” because hiking on a “shared-use” trail will no longer be enjoyable.

Public Safety

I’m not sure what has changed in the last number of years, but it seems to me that laws, rules, and regulations used to always be written to error on the side of being overly safe. I’m not sure if it was the threat of lawsuits, a less corporate-influenced society bent more on consumer protection, or what; but the low amount of attention to public safety in many areas just amazes me. (It’s okay that people driving cars at all sorts of speeds and in all sorts of traffic conditions are holding a phone in one hand and having a potentially distracting conversation with someone who’s somewhere else entirely and not even close to being a second set of eyes and ears for the dangerous task of driving the car? – *sorry, off topic!!*)

Both the preliminary general plan/draft EIR and the deed speak of the need to consider public safety. However, in softening the use restrictions to allow “shared-trails” in the steep,

tricky terrain of Nisene Marks, State Parks is certainly chucking public safety out the window. Bikers and hikers on the same trail when the visibility is adequate for them to always be aware of each other would be safe, but what trails in Nisene Marks fit that description? If any single trail is completely safe in this regard, I certainly haven't seen it. Most trails in the deed restricted area of Nisene Marks are probably this safe for as little as 1/3 of the trail and possibly as much as 2/3. This means that almost all of the trails have significant sections that are downright dangerous if "shared-use" is allowed.

Owing to the tightness of the mountains in Nisene Marks and the dense forest, mountain bikes are usually not as easily heard as they seem to be in other places. And on the trails in the deed restricted area bikers riding downhill are typically going fairly fast as such trails can be steep and do attract the best riders. Other features of those trails is that they curve a lot and there's not a lot of visibility. Therefore hikers and bikers on the same trails add up to accidents just waiting to happen. Public safety, called for in the both the general plan and the deed, can only be served if such dangerous situations are discouraged via the rules and regulations:

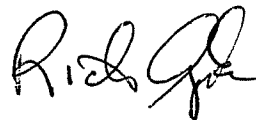
Lack Of Science

Lastly, it is evident that this plan was put together with words and not with very much science. The existing conditions of what is out there are culled from other studies and writings rather than from State sponsored scientific research. In effect, the plan is attempting to establish how to protect something that it has not even defined. Where are the field surveys and biological inventory reports?

If such studies, surveys and inventories are done, I am certain that the evidence of what is actually there in Nisene Marks would demand that a great portion of it be protected at the level described as "Natural Preserves" in PRC Code 5019.71. State budget woes or whatever else has directed this general plan to be for the most part created via mere word processing and graphics cannot justify a final version of the plan that errors on the side of non-protection of resources that have not yet been properly cataloged.

I don't mean this to minimize the work that many have done to create and present the plan thus far. Clearly many dedicated people have been working very hard to create and present where they'd like the Forest Of Nisene Marks State Park to go. I just believe that they're getting some very important aspects wrong.

Thank You,

A handwritten signature in black ink, appearing to read "Rich Apple", with a stylized flourish at the end.

Rich Apple

RECEIVED

30 April 03

MAY 05 2003

NORTHERN SERVICE
CENTER

Ellen Wagner
P.O. Box 942896
Sacramento CA 94296

re: The Forest of Nisene Marks State Park Preliminary General Plan/EIR Report

When I heard about a year ago that State ecologists were going to "finish up" and submit the EIR I was encouraged. I have great respect for the State as a retired CDFG marine biologist and felt that an objective and factual Report would be submitted.

I am disappointed that such an incomplete and seemingly "political" document is passed on as an EIR. The mistakes of species identification, erroneous figures on slope and soils, and blatant omission on the ecological and educational value of the Mangels Ranch Area are examples of disturbing parts of the document and degrades the quality of an official State document.

To repeatedly refer to "Multiuse" or the rhetorical euphemism of "shared" trails appearing at hearings and in the text, and then ignore the damage being done by horses and bikes in the park on "multituse" trails indicates the failure of the framers and editors of the document to report cause and effect parameters.

I implore you and your staff to come to the park and see for yourself what the environmental conditions are. I am sure you have not done that or the repetitive errors and omissions of valuable ecosystem and species information would not have occurred.

I believe that there should be an extension on the EIR/Plan deadline by at least two months for you to produce a workable and meaningful EIR.

Sincerely,

Dan Miller
Dan Miller

735 Cathedral Dr. Aptos CA 95003 ph/fax 831-688-3792

cc Mary Nichols, Secretary of Natural Resources Agency; Bill Berry, Sacramento Office; Superintendent Dave Vincent,; Chief Ranger Ralph Fairfield; Supervisor Nedra Martinez; Kirk Lingenfelter, Trail Manager for Santa Cruz CSP parks; Randy Widera, Friends of Calif State Parks, Santa Cruz; Ventana Chapter, Sierra Club Santa Cruz Area.

Mary Nichols, Secretary for Resources
1416 Ninth St. Suite 1311
Sacramento CA 95814

30 April 03

Over a year has gone by in this General Plan process since my last informational shipment to you and Bill Berry. I have had exceptional support and assistance from CSP Santa Cruz District officials and field workers in my studies.

I have enclosed with the General Plan/EIR critique a copy of the 2002-2003 winter census which confirms that the censusing technique is sound and can predict the effects of any possible changes in trail use designation.

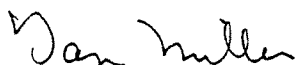
I have attempted to assist the CSP to resolve the serious trail conflicts which are increasing in the park. All users can and should use the Park, but it cannot be done socially and biologically when all the trails are multi-use in environmentally sensitive areas, in areas which are especially important for contemplative and aesthetic retreat, and for school education.

The Plan/EIR Document has diminished some of the optimism I had that the CSP sincerely wants to decrease bike use in the lower area. This was stated by Superintendent Vincent over a year ago at a hearing. At the recent hearing on the Document on April 12, 2003, Superintendent Vincent did not repeat that goal, but uncomfortably mentioned "shared" trails as an important function of the Plan.

The Plan almost entirely ignored the ecological and educational importance of the Mangels Ranch. Also, it increased greatly the degree of use in the Low Intensity area where new parking lots, more camping, and possible new loop trails (Dave Vincent at hearing) in the Low Use area presents a contradiction of the term "Low".

The Mangels Ranch area was included in the "High Intensity" use area. I am now concerned about the possible effects of equestrian pressure to allow horses through Mangels Ranch as well as demand by bikers to "share" the trails.

I am now confused and uncertain about how things may go. I feel now it may I have been better to have suggested to you several years ago that Mangels Ranch Area may qualify as a CDFG Wildlife Area.



Dan Miller
735 Cathedral Dr. Aptos CA 95003

cc. Bill Berry, Dave Vincent, Ralph Fairfield

**Comments on the March 27, 2003 Preliminary General Plan/Draft
Environmental Impact Report for The Forest of Nisene Marks State
Park, With Special Reference to Fully Understand and Protect the
Mangels Ranch Area**

Daniel J. Miller
April 30, 2003

INTRODUCTION

This critique and analysis is presented in two Sections:

SECTION I. Corrections and omissions in the draft Preliminary Report, with emphasis on the lower area of the Park.

SECTION II. This Section describes the lack of attention given to the Mangels Ranch Area in the Plan, presents a brief resume of what is known about the area, and suggests proper usage. This section will also include information from the studies conducted in the Park which support changes in user status of Mangels Ranch.

TABLE OF CONTENTS pages

Section I. Corrections and Omissions of Preliminary Report - - - - - 2-4

Section II. Mangels Ranch Area

A. Recent historical Background - - - - - 4-11

B. Comments to support changes in management status of
the Mangels Ranch Area (Referred to at times as
"Mangels Ranch" or "Ranch" in the text - - - - - 11-15

C. Important Biocommunities in Mangels Ranch - - - - - 15-21

Appendices:

I Figures 1 and 2 - - - - - 22-23

II Listing of Species - - - - - 24-26

III Bio and References - - - - - 27

IV Percentage slope figures of particular trails - - - - - 28

SECTION I

Comments on the Preliminary Report**A. Corrections and Omissions**

1. On Plan page 2, The Trust for Public Land was left out of a list of trusts and organizations which donated property to the CSP in Nisene Marks. 53

2. Dr. Dean Taylor's (Jepson Herbarium, U.C. Berkeley) listing of the plants of the Aptos Creek watershed was not mentioned or used.

3. There is reference to the red willow Series on Plan page 18 and in Figure 6. Dean Taylor does not list the red willow, *Salix laevigata* for the Aptos Creek drainage and the Park. He lists the arroyo willow, *Salix lasiolepis* for the park. I live on the tributary to Mangels creek mentioned in the Plan where red willows were reported and confirm that they are arroyo willow. These species are easy to differentiate. 54

The Coastal Watershed Council preliminary draft report lists the riparian area in Mangels Creek as Maple/Tanoak/Redwood. Maples are more common south of the Aptos Creek Road bridge, and the Santa Cruz Oak (see below) represents part of the canopy throughout the riparian areas in the lower area. This oak can exist in moist low areas in competition with the tanoak as well as on drier hillsides.

4. In the text of the Plan, the white alder, *Alnus rhombifolia* is stated to exist in the small uncut redwood area of the park near Aptos shopping center. This is incorrect, only the red alder, *Alnus rubra* is present in that area. The white alder is listed for the Park, but it is in the higher mountainous areas. 55

5. Cape Ivy, *Senecio mikaniodes* is missing from the table of Invasive Exotic listings on p196. 56

6. The name "Santa Cruz Oak", *Quercus parvula* var *shrevei* has replaced the name "Interior Live Oak" in this area. The Interior Live oak is mentioned in several places in the Plan. 57

7. The Coyote Brush, *Baccharis pilularis* Series is mentioned for the upper area where is it a "rare" community. This species is commonly spread about the lower area, especially in Mangels Ranch. 58

8. The slope figures (Figure 3 in Plan) state that in the lower park area the trails range from 5% to 10% slope. This is not representative of the slopes of trails in the lower area. Nearly all the trails in the lower area have sections with over 20% slope, and some (they will be abandoned) reach over 40% in Mangels Ranch. To assist the CSP in future trail plans and to demonstrate the difficulty of generalizing slope percentages in the park, slopes of major official trails in the lower area are given in 5 ft height increments (Appendix IV). 59

9. On page 18 of the Plan there is reference to an unusual community of understory plants on the West side of Aptos Creek. Some of these species are present in good numbers only in the small section of the flat understory area next to George's picnic area East of the creek. Clintonia is rare on the west side until the Pourroy area about a half mile to the south, and the slink-pod is only near George's picnic area on the east side, with another extensive presence at Mary Easton picnic area on the west side of the creek north of the steel bridge. 60

10. In the discussion of vista points on page 63, the only area in the text for viewing the Pacific ocean was at the overlook. There will be a closer and easily accessible viewing at lower elevation when the Mangels Ranch area is opened to the public. One of the Mangels Ranch ocean vista points is shown on the Plan map B. 61

The upper Park ocean view is primarily for bikers (hikers and runners rarely get that far) which affords a splendid view of almost the entire of Aptos Creek basin landscape with the ocean beyond. It is at 1600 feet, 6 miles from the ocean.

The Mangels Ranch sites are two miles from the ocean. One looks over the purple needlegrass field and presents views of the shoreline and structures as well as a good view of the Monterey side of the bay. The other ocean site is higher at Hawk Point (565 ft) where a bench with back rest has been placed. These ocean vista sites will be available to many viewers because they are only a half mile from parking lots.

B. Existing Serious Environmental Impacts Not Addressed in Plan 62

I reviewed and edited EIR's and coastal development plans for the CDFG. I had not expected that this EIR would pertain only to possible effects of future changes and would not include present serious environmental negative impacts and their mitigation. This was not a standard EIR and does little to solve the problems we have and will have more of in the future without proper guiding procedures in the General Plan.

These impacts may be addressed in several sections of the Plan text for future planning, but the environmental statement in the Plan presents the imagery to the public that there are presently no environmentally negative activities in the park

Here are some examples:

1. It does not suggest removing visitor-built rock dams which impede the movement of migrating steelhead.
2. There are seasonal problems by bike, fishermen, and horse use which could cause siltation in the spawning and nursery areas of the creek. These impacts are being discussed by the Coastal Watershed Council of which I am one of the citizen advisors. Siltation may be increasing at creek fording areas by bikes and horses, and from the bike drop-ins which are eroding the banks near Aptos Creek.
3. There is no mention of the excessive habitat damage being done by bikers. In the Lower area, there are 12 drop-ins (see examples in Figures 1 and 2, Appendix I), seven bike jumps on and near the main trails, and dozens of areas where the trail edges are "climbed" with the vegetation cut back creating an unsightly unnatural experience of the area. Reporting this damage and its mitigating solutions are basic substance of an EIR.

SECTION II

Discussion of the Mangels Ranch Area

The Mangels Ranch area should have more protection from over-use and abuse because of its unique biotic communities and extremely fragile soils. In the General Plan and EIR, discussion of this important new segment of the Park has been rudimentary and does not adequately relate the conditions and values of that area.

63

To many of us who use the park, the purpose expressed on the use sign at the trailhead of the West Ridge Trail gives a clear meaning of the value of the Mangels Ranch Area:

NATURAL SCENERY, PLANT, AND ANIMAL LIFE are the principal attractions of most parks. Trees, plants, and animal life are the integral parts of the natural community and as such receive protection for enjoyment through observation. Unnecessary disturbance decreases the possibility of such enjoyment. PLEASE, do not abuse or deface the property in your State Parks system.

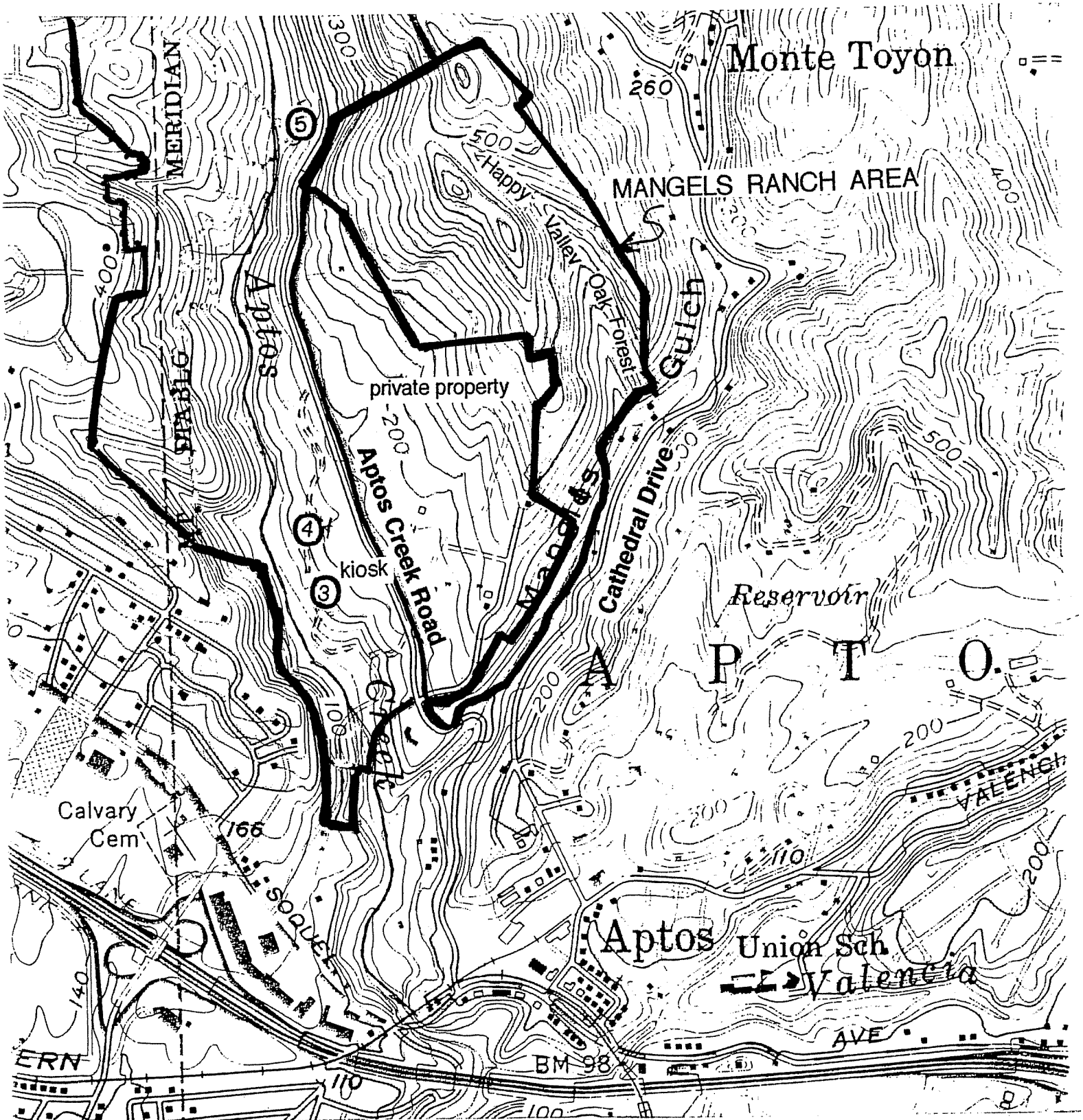


Figure 3. Mangels Ranch area projected upon topographic contours. Note the very steep sides of the Happy Valley Oak Forest where the redwood clusters are located.

— one-half mile —

The 90 acre CSP Mangels Ranch Area previously owned by Emmet and Agnes Reed and by Arthur M. Hetzer is 20 percent of the original 446 acre Mangels Ranch (Fig. 3).

Need for Low Intensity Recreation Management For the Mangels Ranch Area

In the Plan, Low Intensity Recreation has been suggested for a large section of the upper watershed of Aptos Creek and the Hinkley Basin, whereas no section of the Park in the lower areas south of the Porter's picnic area has been so designated. The reason given why the upper area was given a Low Intensity Recreation rating was (page 110 of Gen. Plan):

"This zone will encompass the northern section of the park and was defined based on the abundance of sensitive resources occurring in this area."

Based upon the criteria for declaring low intensity classification for the "upper watershed" area, the Mangels Ranch has even greater need for such protection to the point that it should be considered as a Wilderness Area and worthy of being managed as a Nature Preserve without being so named.

This paper includes a description of three sensitive plant ecosystems and communities in Mangels Ranch which are of special value to the scientific world, as well as for aesthetic appreciation and natural history education. Listing of observed Birds, Mammals, Reptiles, and Amphibians, and key Plant species is presented in the Appendix II to demonstrate the high diversity of the Ranch. Like the upper area, there are several communities including grassland as part of the Coastal Prairie Ecotome, inland and coastal brush areas, oak woodlands intermixed with large trees such as Douglas Fir, madrone, bay, sycamore, willow, and maple, the redwood clusters, and a riparian area of tanoak, redwood, Santa Cruz oak, and maple. There is a large area covered with chain fern on a water seeping cliff area.

Request for Change of Classification

**The Mangels Ranch Area Should be Designated as
a Low Intensity Recreation Management area,
Including Preclusion of Horse and Bike Use.**

A. RECENT HISTORICAL BACKGROUND

1. How the State Acquired the Mangels Ranch Area

In 1995, an activist group, the *Friends of Nisene Marks State Park* formed to protect one of the remaining old-growth redwood stands in Santa Cruz county from being logged. The trees were in 30 unique clusters on 95 acres of land adjacent to The Forest of Nisene Marks State Park (referred to as "Nisene Marks" or "Park" in this paper). The owner, Mr. Hetzer, to meet bankruptcy requirements, filed for a timber harvest permit to satisfy the bankruptcy process. Mr. Hetzer permitted me to study the redwood cluster area because he did not want to log his property.

The "Friends" group (about 30 members) was a local effort to preserve a very unique, wild and beautiful area which nearly all the neighbors did not want to see logged or developed for housing or commercial activity.

As a retired biologist and ecologist who had the time and knowledge of the natural values of the area, and as chair of the "Friends" organization, I became a volunteer contact person between The Trust for Public Land, Mr. Hetzer, the CSP, the bankruptcy court in San Jose, and neighbors for a year and a half.

I had gained much personal knowledge of the Ranch since 1962 when we moved here. We assisted the previous owners, Emmet and Agnes Reed, by monitoring the property for trespassers, removing trees which fell across the roads, and clearing vegetative growth over some of the trails. I also conducted nature field trips for 4 H members on the trails in Mangels Ranch and near Aptos Creek.

In my major in Wildlife Conservation at U.C. Berkeley under Aldo Starker Leopold, I took sufficient forestry courses to satisfy as a minor in that subject. During a year of the bankruptcy negotiating time on the Hetzer property, I conducted a timber harvest survey. I was aided by several people who recorded measurements made of the 866 redwood trees over two inches in diameter on the property .

The value of the timber harvest was approximated and reported in a paper submitted on November 25, 1997 titled: *Results of Survey of the Redwood Cluster Ecosystem on the Property of Arthur M. Hetzer, Aptos, California*. It was submitted to the CDF, CSP, those holding trusts on the land, and the bankruptcy Judge. I described the kind of damage that would take place to this near pristine woodland area, and how little money would be attained to help pay off Mr. Hetzer's debts of over a million

dollars.

The report noted not only the harvesting of half of the old-growth trees (Figure 4) as proposed in the timber harvest proposal submitted to the CDF by the logger, but also removal of Douglas firs and dense areas of oaks which would be destroyed in the logging process. It was not known at that time that the most abundant oak trees were of a new subspecies. Little is known of the life history and ecology of this tree.

The holders of the three trusts on the property, Mr. Hetzer, and the bankruptcy court realized that the property was worth more unlogged, especially if it would be in State control for the public to use and to enjoy.

I was asked by The Trust for Public Land to demonstrate the natural and aesthetic values of the area to the person who represented the family trust which eventually donated most of the purchase cost of the property to The Trust for Public Land. The CSP received ownership of 90 acres of the property in March, 1999.

2. The first year of CSP ownership

For over a year during the bankruptcy hearings before the State received the property, the public started to use the dirt roads. Due to the rapid plant growth in a "redwood jungle" many areas of the roads became narrow trails. Restriction of usable road area for hiking was also caused by horse hoof damage forming deep drainage ruts.

Emmet Reed only occasionally rode horses on the trails and rarely in winter. He was aware of the especially fragile and erodable soils on his land.

Bikers started to illegally use the Ranch through Monte Toyon Conference ground property near Redwood Drive then on the steep half-mile downhill run dropping over 400 ft in altitude past our house to the Mangels-Van Eck Redwood at Aptos Creek road. Deep drainage ruts were formed within a year by horse and bicycle use.

When the State took the property over, CLOSED AREA signs were not immediately placed on the property. Horse use increased, especially in the winter thus creating more drainage ruts in the middle of some of the trails. The CSP did not have the enforcement capability to stop these illegal incursions.

Unknown to myself and the neighbors, the Mangels Ranch Area of "Nisene Marks" was not open to the public after the State received it because a CEQA had not been

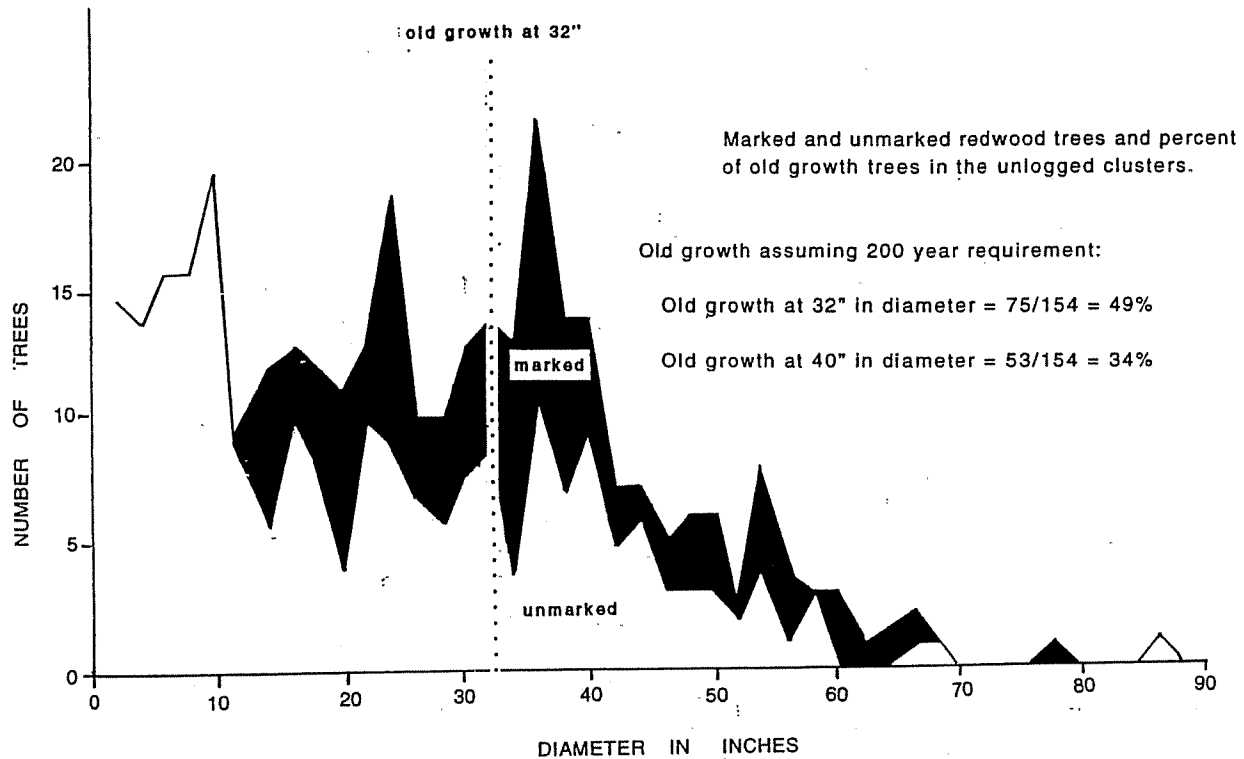


Figure 4. Unmarked trees and trees marked for removal in the Hetzer Timber Harvest Plan. Trees were marked by Professional Forester Stephen Staub, Santa Cruz. Old-growth redwoods (200 years old) in the clusters are 32 inches in diameter.

The blackened part of the diagram represents the number of trees which were marked for harvesting in each two inch category. The white portion under the black area represents those trees in each size category which would remain uncut in this harvest plan. Ten inches in diameter was the harvesting minimum size, but 18 inches is usually the preferred minimum size for lumber products. Some of the smaller trees were marked for removal because they were not of potential commercial value and were going to be removed from the forest to enhance the growth of the remaining trees.

submitted. The CLOSED AREA signs were erected after I had submitted to the CSP a detailed report titled: *Proposed Trail Restoration and Special Designation for the Mangels Area of the Forest of Nisene Marks State Park, June 20, 2000. 104pp.*

These signs did not stop the horse riders from continuing to badly erode the trails. Bicycle use was reduced to an occasional rider, primarily because of lack of maintenance funding prevented CSP removal of trees which had fallen across the trails. I started reporting horse use trespassing to the CSP, and, with permission from the CSP office, my wife erected a sign reminding them to not use the trails when wet, but they ignored the signs.

What finally stopped horse riding was a massive washout of the dirt road which made it unsafe for use of this trail. After that, a large tree fell across the riparian part of the trail which totally stopped all incursions from the lower area including the occasional hikers and runners.

Horse riders still illegally entered the upper parts of the Ranch area, riding through George's picnic area up into the posted Monte Toyon Conference grounds then into Mangels Ranch, exiting onto Aptos Creek Road near the southern trailhead of the Buggy Trail.

3. Research conducted to assist the Park in the General Plan

When first reading the General Plan I realized that the small amount of money available to the State in the anonymous gift was probably inadequate to accomplish what was needed to understand the complex and dynamic cultural, social, and biological interacting features of this Park.

In working for the California Department of Fish and Game (CDFG) I conducted effort and use censuses of the coastline from Oregon to near Santa Barbara (see reference in Appendix III). During this five year period I worked closely with coastal State Park personnel, especially at the Monterey CSP headquarters office where the CDFG office was. I was very well informed on park policy and problems.

As soon as the General Plan studies by the official groups contracted by RHAA started, I initiated several studies in the lower section of the Park. I felt that certain basic information may not be accomplished within the format of the General Plan. These included:

- a. Total Effort and Use Censuses: Miller, Nov. 19, 2001; April 12, 2002; and April 4, 2003)
- b. A study of the potential usage of the entire lower park adjacent to Mangels Ranch in relation to ecosystem and environmental values (May 7, 2001).
- c. An Atlas of all the trails, official and unofficial, in the lower area from the steel bridge into Aptos (August 10, 2002, see example, Figure 1, Appendix I).

All these publications except the April 4, 2003 census were in the hands of RHAA and in the main office of CSP in the Santa Cruz area.

B. COMMENTS TO SUPPORT CHANGES IN THE MANAGEMENT STATUS OF THE MANGELS RANCH AREA

Throughout the past four years I have been working with CSP personnel and I know they are aware of the Park problems and have a good grasp of the environmental and ecological attributes of the Park. I have heard many statements that there are no simple ways to guarantee the protection of unique and rare plant communities and species, or to establish trails that diminish or eliminate the conflicting values of bikers, walkers, and runners. The Park in the lower area has been almost uncontrolled since bikers were allowed to use all the trails except the Buggy trail.

Because of lack of enforcement it was also not possible to preclude bikes and horses from trails where the slopes and soil conditions cannot withstand the excessive damage by horses hooves and bike tires on slopes greater than 10%. Nor could bike thrill seekers be prevented from making "drop-ins" down steep slopes, causing denuding of vegetation (Figures 1 and 2, Appendix I) and endangering walkers.

Trail erosion is occurring on all slopes and even on flat areas that are not drained properly. This is a common condition on the primary horse trail in the Park, the Rancho Aptos trail which leads from near Redwood Ranch to George's picnic area.

One of the trail restrictions in CSP trail procedures is that if a section of trail with a slope between 10% and 20% extending over 200 feet is damaged by horses or bikes it would be closed to those user groups, and that those users could be precluded on slopes over 20%.

Percent slope data are important criteria limiting trail use, but soil erodibility type is also a major factor in trail damage. There are some CSP trails in the county which would be difficult to erode, being almost packed gravel at the start. I have hiked briefly in all the parks of the county and Nisene Marks has a high degree of slope/soil fragility damage. Apparently the Marks family knew this as well as Emmet Reed, and the Marks family made a deed restriction of their property to preclude the use of horses.

In the early 1970's a Citizens Advisory Committee was formed by 14 residents including Emmet Reed, Herman Marks, and Diane Porter Cooly. Nils W. Bergman, the first full time ranger for the Park, reported the events in a report (Aptos library ref. sect. R979.471) November 1972 in which the following Declaration of Purpose for The Forest for Nisene Marks State Park was published:

The purpose of the Forest of Nisene Marks State Park is to make available to the people forever for their inspiration and enjoyment, the redwood forests and related vegetation of the watersheds of Aptos and Hinkley Creeks in an unimpaired condition, together with all the scenic, scientific, and educational values and resources of the area.

The function of the Division of Beaches and Parks is to preserve and protect the natural values of the park to interpret them to the public, and to provide such facilities and services consistent with the declared purpose and intent of the donor as are necessary for the visitor's enjoyment of the park.

Multiuse Trail Concept

On April 12, 2003, CSP Superintendent Dave Vincent gave reference to "shared" trails as a possibility to accommodate all users. It was not clearly stated that most of the Parks "problems" are caused by bikers and horse riders who degrade the quality experience of trails for others and trail damage for users on foot.

If this concept is a basic policy of attempting to accommodate all user groups on "multiuse" or "shared" trail systems, it would be impossible within this Park's boundaries to establish a park which can satisfy the two previous "purposes" as well as the new proclaimed Park purpose in the Plan:

The purpose --- is to preserve and protect the natural and cultural resources, wildland values, and supporting ecosystems of the upper watershed of Aptos Creek and adjacent areas of the Park, while providing opportunities for the visiting public to

enjoy, experience, and be inspired by this unique and diverse topography, geology, biotic communities, and scenic views.” (Emphasis mine)

High, Moderate, and Low Intensity Allowable Management

As mentioned on page 6 of this paper, it is incorrect to infer that only the ecosystems in the “upper watershed areas” are worthy of receiving special area protection. The categories of High, Moderate, and Low Recreational Allowable Intensity also tend to obstruct the ability to fully protect the richest and most unique biological areas of the park such as in the diverse ecosystems of the upper areas, and in Mangels Ranch. It was revealed at the April 12th meeting, that regardless of the degree of Intensity of Management, bike trails could be established on any of the hiking trails throughout the Park, and horse use on all trails south of the steel bridge. 65

However, these Intensity categories are important as guidelines at this time. A Low Intensity Recreation category could give greater long term assurance that future managers will be able to inhibit over-use of an area. Through a variety of closures and preferences they can maintain natural values by limiting urbanized recreation. The message to the public that a certain area is of special importance can be expressed within these categories.

The Federal Government addressed the problem of park use values and carrying capacity of National Parks resulting in an extensive study: *Social Carrying Capacity of Natural Areas: Theory and Application in the U.S. National Parks*. Robert Manning, David Like, and Marilyn Hof in *Natural Areas Journal*, 16:118-127. 1996

They made an extensive interview study of park attendees in Arches National Park to determine why visitors were there and what preferences they had to achieve a “Quality of the Visitor Experience.” This was done on a “Biological to Social” format. They had a range of 16 attitudes to the Delicate Arch area toward management of the entire park. Near the top most desired were: better education on behavior of the visitors; to stay on designated trails; and for visitors to learn more about the fragile park resources before using the area.

Near the bottom of importance to the visitors were: construct barriers to keep visitors on designated trails; provide more parking; and develop wider and paved trails to accommodate more visitors.

The upshot is that visitors want more solitude and unmarred scenery. To meet the

desires of the public, among other methods, they limited the number of parking places at Delicate Arch so that no more than 30 visitors could be there at the same time. That is not to say that Mangels Ranch should be limited to few visitors each day. On the contrary, class education and contemplative use could be high, but there eventually may have to be reservations required for large groups to use the area at certain times.

At a March 2002 hearing, Superintendent Vincent announced that there would be less interaction with bikers and other users in the lower area. I believed this policy would apply especially to the Mangels Ranch area which is an area in need of species and ecosystem protection. There is a potential in this area for over-crowding which would destroy the natural attraction values. Precluding horses and bikes would greatly reduce use intensity, possibly requiring few if any use restrictions for those on foot.

The Preliminary General Plan diminished hopes that the lower area would have better protection in the long run from excessive urbanized recreational use. For instance, Plan C included several multiuse trails in the lower area, one of which passed through the center of Mangels Ranch. Horses and bikes would increase eroding the trails already in need of repair or planned for bypass trails. At the beginning of the April 12th hearings, these multiuse trail proposals in Plan C were removed by the CSP.

The purple needlegrass fields in Mangels Ranch would be in danger of being streaked with erosion lines by bike thrill-runs and jumps. Bike use would interfere with the educational programs at interpretive sites and stress users on foot on the trails.

PROPOSED PRIMARY FUNCTIONS OF THE MANGELS RANCH AREA

The primary functions of the Mangels Ranch area are to protect unique biocommunities and species, to provide for educational study at interpretive stations, and to offer enjoyment of solitude in near pristine woodland environments. This requires the area to be free from the stress of bikes and horses which can be dangerous, degrade the habitat, and damage trails.

The following are examples of these values in the General Plan which demonstrate why the categories of low intensity use and preclusion of bikes and horses is required for the Mangels Ranch area.

Page 1. "A Quiet Forest Close to the City"

Page 104: "The lower-intensity emphasis provides opportunities for quiet enjoyment of the Park, ---"

Page 5 : Under high intensity "Visitors can expect a high incidence of visitor encounters during times of peak-use."

Page 110: Under low intensity "Visitor experience and recreation opportunities in this area would be primarily hiking, walking, biking, or nature study ---" (emphasis mine, should not be "primarily")

C. IMPORTANT BIOCOMMUNITIES IN MANGELS RANCH

1. Redwood Clusters

There is no description of this redwood habitat adaptation in the draft EIR, except for noting there were 30 unlogged clusters in Mangels Ranch. There are actually 33 clusters, but three of them have been logged, one on the periphery of the unlogged clusters, and two closer to Aptos Creek road on the Aptos Creek drainage (Figure 5). Details of this unusual adaptation is given here to relate the importance of this plant's ability to survive in poor conditions. Description of this behavior would be a splendid topic for an interpretive station.

At the public testimony on Mr. Hetzer's Timber Harvest Permit (THP 1-96-212, Hetzer., June 24, 1996) by the CDF at Felton, Dave Hope of the Santa Cruz County Environmental Department testified that redwood clusters were rare and he was concerned because the redwood trees to be harvested were in these clusters.

From a tape of the testimony; Dave Hope remarked:

I was very surprised not to see stumps --- I don't know enough about this type of habitat now -- We are going to find somebody to do it. I have not seen this kind of area before in Santa Cruz county, and even in Mendocino county. I've crawled over all that area with my dad two or three times and did not see this kind of habitat.

The county went on record against the timber harvest primarily on this concern. I had just started my intensive study of the cluster area at that time, and Mr. Hope's remarks gave me memory of the importance of a forestry course I had taken at U.C. Berkeley in 1949.

It was called "Forest Influences". The lecturer wrote the book for the course: *Forest*

Figure 5. Map of Mangels Ranch Area. This map does not include most of the Riparian Trail south to Aptos Creek Road.. It is not in the "near pristine" zone of Mangels Ranch, having been logged. It is now being mapped.

Monte

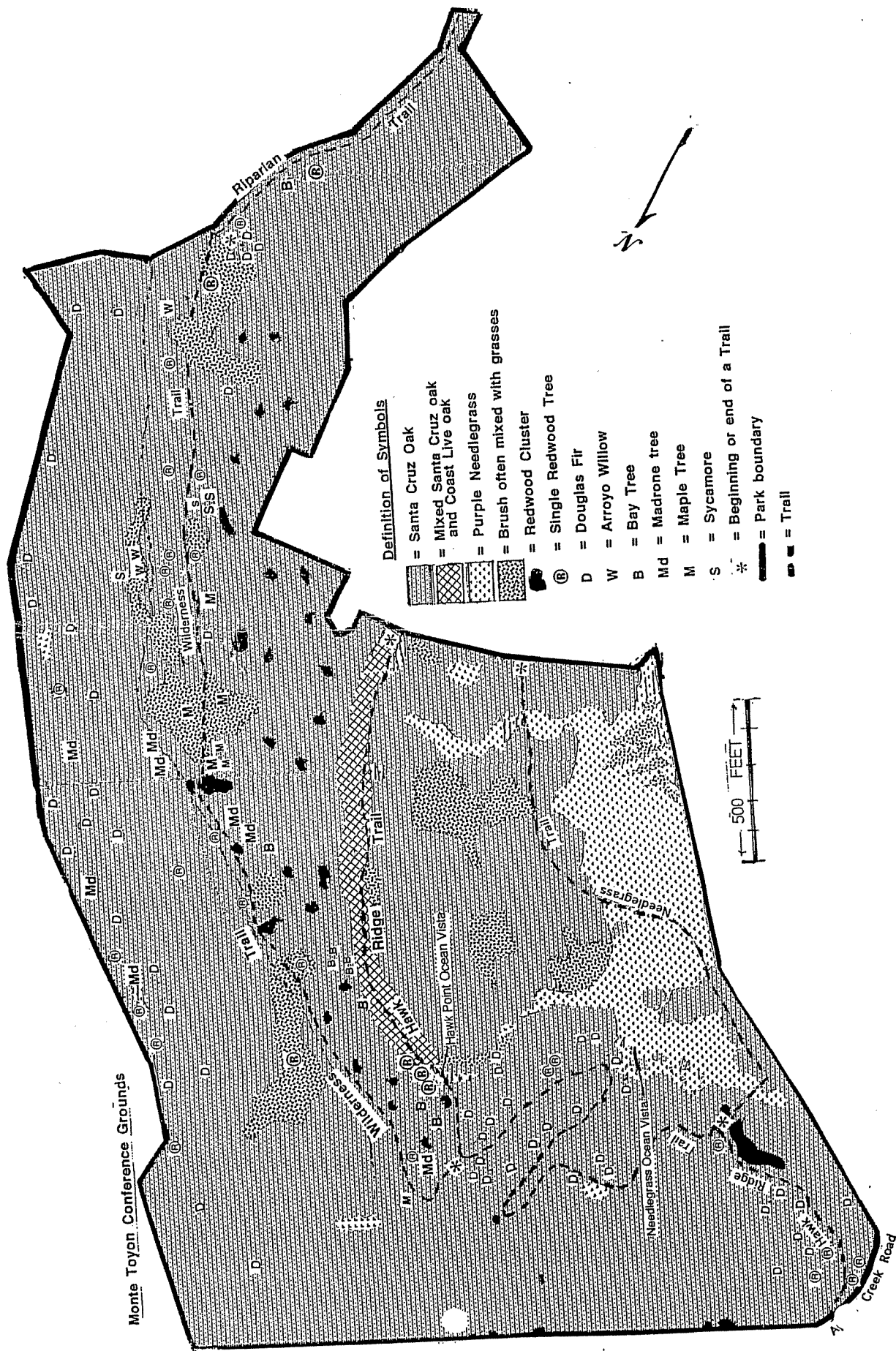
Notice. This map is not an official California State Parks map. There will be a thorough trail study of the area in the Comprehensive Trail Plan. CSP officials will then determine where the trails should be, which user groups can use them, and where interpretive stations should be. This map is not to be reproduced for it is a draft of continuing study being made in the area.

The placement of lone trees is not completed. Those included were made from the trails with binoculars and is fairly accurate to within 150 ft each side of the trails. The area on the north end adjacent to the Monte Toyon property was not surveyed, but in studying the area three years ago, it is very similar to the rest of the park and the canopy is dominated by the Santa Cruz oak.

There are several small areas which have been labeled as purple needlegrass which are mostly of Mediterranean annuals. These have been designated by placing horizontal lines through these areas where incursions of other species have occurred. These seeds commonly become established along trail areas through horse manure and possibly dirt in their hooves in which the seeds remain viable and are thus easily distributed. The trail areas near Hawk Point have established areas of ripgut, *Bromus ridigus*, wild barley, *Hordeum*, and rattlesnake grass, *Briza*. These could be removed by the Invasive Plant removal workers along with French broom (nearly all removed now), a small area of Cape Ivy, and some persistent periwinkle.

®
®
Creek

Monte Toyon Conference Grounds



Influences, The Effects of Woody Vegetation on Climate, Water, and Soil by Joseph Kittredge, Professor of Forestry, University of California, 1948. This book was one of the American Forestry Series published by McGraw-Hill.

One of the field experiments we did was to measure several parameters in a small grove of trees in Strawberry Canyon on the U.C. campus. We recorded the differences in "climate" inside the grove and outside in thick inland brush community. Some of these data were relative humidity, wind speed, amount and quality of litter, soil structure, and rate of water percolation into the soil. I don't remember the figures of the results, but we were impressed how much the grove of trees (I believe they were planted redwoods) created a micro-climate within and adjacent to the grove favoring redwood requirements

I had been hiking past the clusters in the Ranch for about 30 years and realized that they were present on a summer-dry brush and oak woodland possibly because they created a "redwood" climate for themselves. It was not until I heard Dave Hope that these were not common growth patterns either here or in other areas of redwood's range that I realized the importance of the cluster formation. I did not study these clusters as we did the grove of trees in my class, but could observe the effects of the cluster formation and they do indeed make their own "climate" and can thus survive at the dry edge of their range.

There are three redwood communities on Mangels Ranch, but the clusters are the dominant redwood habitat. There are scattered redwoods in the redwood-tanoak riparian community along Mangels Gulch, and a few individual redwoods and clusters in the Aptos Creek drainage which were logged.

How clusters form is problematical. In harvested areas, clones or "sprouts" grow on the ground at the periphery of the stump or on the edges of the stump. As mentioned on page 17 of the Preliminary document:

"Many of the Park's redwoods grow in clusters formed when the parent tree was logged and subsequently stump-sprouted,---

The uncut clusters in Mangels Ranch are different. They may be clones from past disturbance to a tree or possibly seedlings took hold on the outer edges of the larger trees. Some of the redwoods in the Mangels Ranch clusters and several isolated trees are well over 500 years old. On page 16 of the Plan it states that the clusters in Mangels Ranch are: *"to be estimated over 200 years old"*.

In each cluster there are trees of all ages. In some clusters there are a multitude of sprouts (clones) at the base of most of the trees, whereas in some clusters there is very little new potential cloning reproduction. Much research needs to be done before the cluster formation process is better understood.

About 35 years ago an 80 x 100 ft clearing of a small flat area was smoothed under the direction of Emmet Reed. The area was adjacent to one of the large clusters surrounded by inland brush species. This was near the 1500 ft distance from Mangels creek on the Wilderness Trail (Figure 5). Nothing was done with the clearing, and the native vegetation grew back quickly.

Subsequently in this near pristine area redwood seeds sprouted and a young redwood cluster formed. In the center of this about 80 x 100 ft. area, about 50 young redwood seedlings appeared at the same time. The largest tree diameter is now 14 inches (about 20 ft tall), but most of the remainder range from 8 to 11 inches in diameter. Even at this young stage, there is so much shading from the contiguous crown cover that no other plants are growing on the litter floor, and many of the inner redwoods are dying or dead. There are now 40 trees over a 50 x 80 ft area, some of them no larger than 2 or 3 inches in diameter. Limbs on all the inner trees are dying up to about 10 -12 ft. height because of lack of light. This would be a splendid study area for ecologists.

There are no redwood clusters and only three isolated redwoods on the dry west facing slopes that receive the afternoon sun. This area is dominated by the Santa Cruz oak (see below). Redwood clusters appear only on the hillside which gets the cooler morning sun.

The contiguous crown formed by the trees in a cluster reaches almost to the ground along nearly all the periphery. Apparently there is not enough light for plants to live inside the cluster. Another factor of exclusion of plants inside the cluster may be that water and soil nutrients may be totally consumed by the ring of trees forming the cluster.

Dr. Dean Taylor, of the Jepson Herbarium, U.C. Berkeley (pers. comm.) noted that fog drip from redwoods contributes up to 60% of the annual water supply to redwoods in optimum growth areas. I have seen fog drip here, and have no data on its importance to the clusters and downwind Santa Cruz oaks and brush species.

Using increment boring and downed tree growth ring data in the Mangels Ranch clusters there was little increase in growth of the remaining trees in the logged cluster. The cluster growth rates are much slower throughout their life than in areas with more optimum redwood conditions.

An old-growth redwood has several attributes, but one uniform requirement is that it must be around 200 years old. Old-growth redwoods growing in optimum conditions average about 40 inches in diameter. In the Mangels Ranch clusters, the diameter of a 200 year old-growth tree is 32 inches. Using this classification of an old-growth tree, 49 percent of the trees in the clusters to be harvested were old-growth trees (Figure 4). The timber harvest would have removed 50% of the old-growth redwoods, with another 50% of the remaining to be removed ten years later.

2. Purple Needlegrass, *Nassella pulchra*

Another forestry class I took at U.C. Berkeley was a course in grass identification and range and pasture management by Professor of Forestry, Arthur Sampson. He was the author of his course book *Range and Pasture Management*, 1923, John Wiley and Sons.

In a field trip to an experimental range station near Fresno, he unexpectedly stopped the trip at a field along the road. He was quite excited about finding a field he had not seen before of the purple needlegrass, an important native bunchgrass species. It has been named as the State's official grass. At that time, acreage in which this species was dominant was becoming rare in California. This species was being replaced by large-seeded Mediterranean annuals, primarily wild oats (*Avena*), several brome (*Bromus*) species, ryegrasses (*Lolium*), barley (*Hordeum*), and rattlesnake grass (*Briza*).

The seeds of these annual grasses were brought to the Western hemisphere in the wool of sheep and on the hairs and hooves of cattle and horses as early as the late 1500's. They adapted very well to our Mediterranean dry summer climate, and possibly partly because of the hoof damage to native grasses by the new heavy grazers, the introduced grasses now dominate the dryer fallow fields and most of the grazing hills of California.

On page 14 of the proposal is a descriptive report on the purple needlegrass. Mention was made in the Plan of the 2.5 acres of area "overwhelmingly dominated" by this species. This is true but there are several concentrations (possibly up to 2 more acres)

of this grass in Mangels Ranch where it is well established, mixing with other native grasses and brush.

I did not know that this species (page 14 of Plan) is considered rare by the California Department of Fish and Game's Heritage Division. I believe that this species is the only native species in the Park so designated by this organization, adding to the justification why the Mangels Ranch area qualifies for Low Intensity Recreation and assurity of total protection from bike and horse intrusion.

I showed the ESA biologists the much greater growth of *Nasella* where Mr. Hetzer's horses had heavily grazed a portion of the field. The grazing had been very intense - almost none of *Nasella* plants were allowed to seed for at least four years.

When studying the area, I believed that if the State received the property it would have to be artificially seeded with *Nasella*, but apparently the seeds retain their viability for years, and in one year the area was heavily covered with *Nasella*.

Nasella plants start their new leaves after the first fall rains. These fields are grazed by deer most of the year. The leaves die back in June from the bunchgrass crown soon after seeding which occurs from early April-May, but the dried leaves and seeds are still eaten by deer throughout the summer.

According to range managers, *Nasella* was the major grass species in the lower altitudes around the Central Valley for the herds of deer, elk, and antelope in pristine California. Dr. Dean Taylor considers The Mangels Ranch *Nasella* fields as a valuable species in a remnant area of the Coastal Prairie Ecotome.

3. The Santa Cruz Oak, *Quercus parvula* var *schrevei*.

Dean Taylor in his *Plant Checklist for Nisene Marks State park, and the Aptos Creek Watershed, 2002* lists five species of oaks including the Santa Cruz Oak, *Quercus parvula* var *shrevei*. It is a tree form of the Island Scrub Oak on Santa Cruz Island off southern California.

The Santa Cruz oak subspecies has been accepted by the scientific community. In Santa Cruz county and parts of Monterey, San Luis Obispo, and Santa Barbara counties, the subspecies *Q. parvula* var *shrevei* replaces the name *Q. wislizenii*, the Interior Live Oak which still retains its species and common names throughout the

areas of the state where it is established.

I first encountered this taxonomic change in *Oaks of California* by Bruce Parvik, et al, 1992, where it stated that " - - - It was thought to be an unusual form of interior live oak that just happened to thrive in a much cooler and wetter coastal environment. Although the complete story of Shreve oak has not been told, it seems to be abundant in Santa Cruz and Santa Lucia mountains of the central coast."

The "incomplete" story is that there are some taxonomists who still feel it is a subspecies of the interior live oak. The California Native Plant Society has accepted the Island Scrub oak subspecies calling it "Shreve oak". Dean Taylor in his plant listing calls it the "Santa Cruz oak." It is listed as a valid subspecies in Jepson's Manual, 1993, but without a common name.

There is uniform agreement that it is different from any other taxon, and that it should be recognized as a subspecies rather than a separate species. I am uncomfortable with this uncertain common name determination. When discussing this species with plant enthusiasts, I use "parvula".

In Nisene Marks it was the primary oak in the redwood harvest areas, along with the tanoak in more moist areas (Figure 5). The Santa Cruz oak was probably almost totally cleared in the logging process as well as for fuel in unlogged areas. It is now returned in the logged areas as an important "second growth" species.

In the near pristine areas, It appears in all the communities of plants in Mangels Ranch: in and bordering *Nasella* areas, in the riparian zone, it is mixed within both coastal and inland brush areas, and Douglas fir and a few redwoods are scattered within most of the dense Santa Cruz oak concentrations. Coast Live Oak trees (*Quercus agrifolia*) in Mangels Ranch are mixed with "parvula" only on Hawk Point Ridge (Figure 5).

The Mangels Ranch is an ideal area for research and for public interest in the ecology of the diverse plant and animal communities of the central California coast.

APPENDIX I

Figures from Text

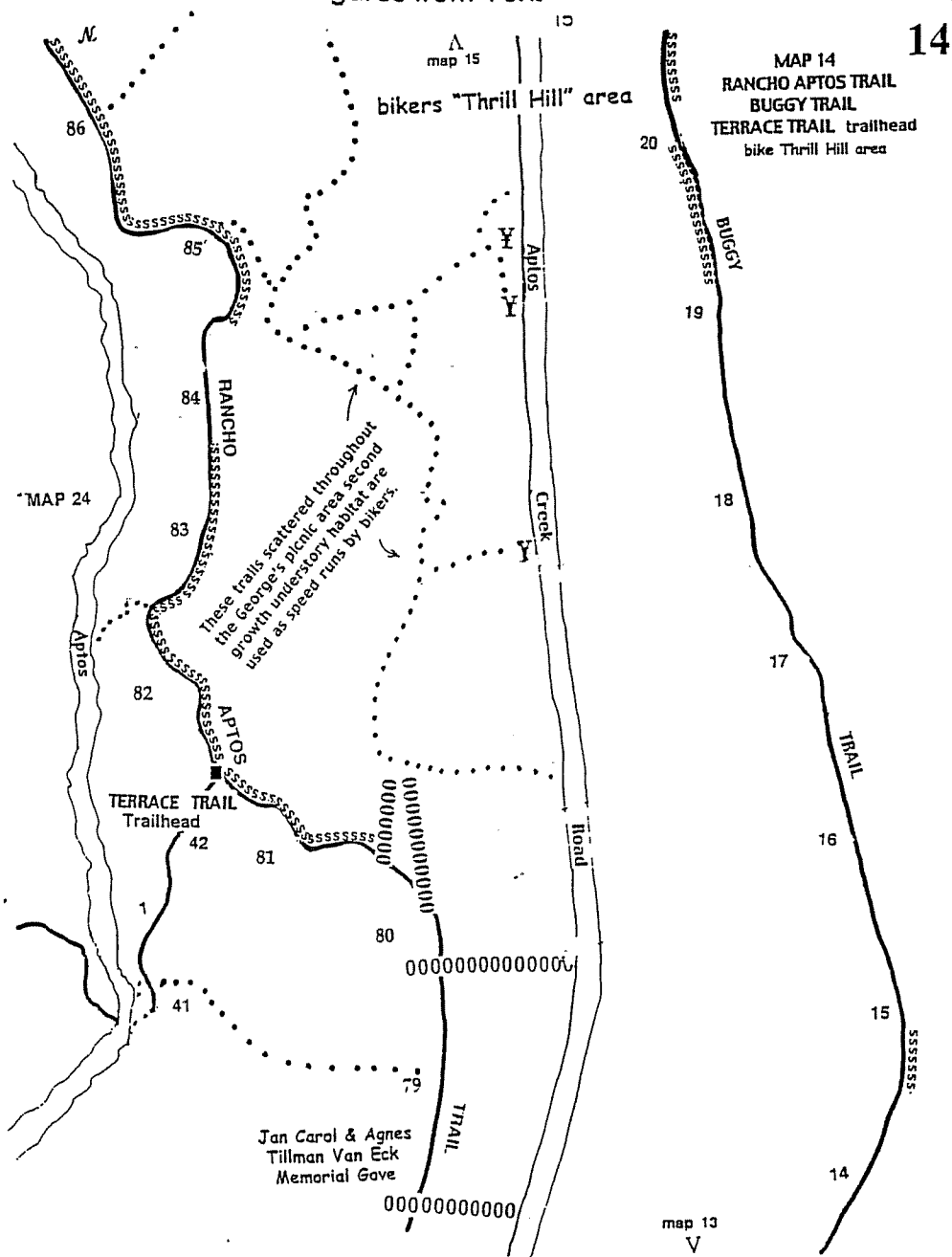


Figure 1, Copy of map # 14 of the Atlas of Trails for the Lower area. This zone has been highly used by thrill-loving bikers for several years. Note the drop-ins or "thrill runs" crossing the Rancho Aptos Trail (see photos of these in Figure 3):

0 0 0 0 0 = drop-in; ♢ - bike jump; - - - - - = unofficial trail ; ——— = official trail
numbers on trails are at 100 ft intervals



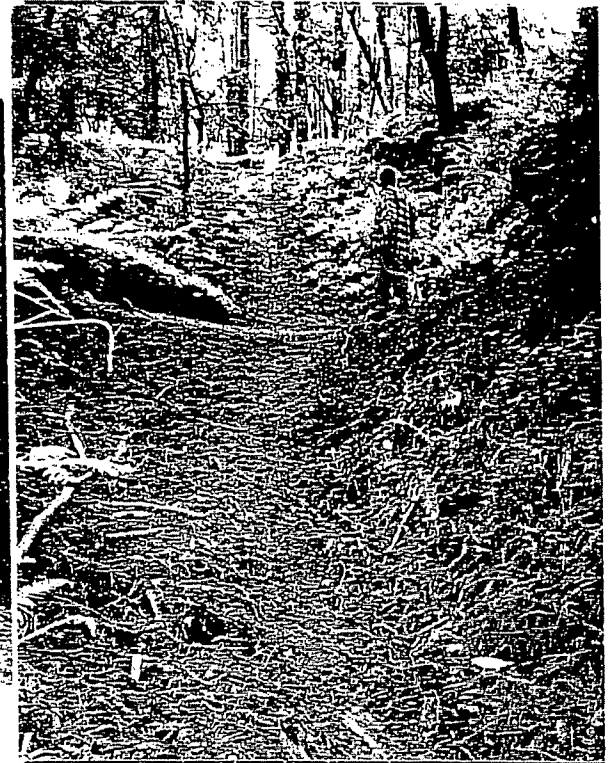
Looking down "thrill hill" from the edge of the flat George's picnic area containing a dense understory redwood growth. Arrow "1" is the most steep thrill run starting on Aptos Creek Road (fig. 3). Arrow "2" is the next thrill run toward Aptos (fig 4).



Looking up thrill hill standing on Aptos Rancho Trail. The thrill hill run slows down on the main trail. The steepest area of the thrill run has about 70% slope.



Standing on Aptos Rancho Trail where the steepest thrill run leaves Aptos Creek Road ("1" arrow on fig. 1).



Standing on Aptos Rancho Trail at the next thrill run off Aptos Creek Road ("2" arrow on fig 1) toward Aptos. The biker has a small jump off the main trail and then has about 80 ft to stop below the main trail. The run is not quite as steep as #1.

Figure 2 Photos of bike damage shown in Figure 2. The runs in pictures J and K originate at Aptos Creek road which is about 18-20 ft. in height above Rancho Aptos trail. Those runs are marked 1 and 2 on picture H, which was taken from the top of picture I.

**Birds Observed in the Mangles
Ranch Area**

**APPENDIX II
Partial Listing of Species
Observed in Mangels Ranch**

Turkey Vulture, *Cathartes aura*
 Golden Eagle, *Aquila chrysaetos*
 Sharp-shinned Hawk, *Accipiter striatus*
 Cooper's Hawk, *Accipiter cooperii*
 Red-shouldered Hawk, *Buteo lineatus*
 Red-tailed Hawk, *Buteo jamaicensis*
 American Kestrel, *Falco sparverius*
 California Quail, *Callipepla californica*
 Band-tailed Pigeon, *Columba fasciata*
 Mourning Dove, *Zenaidura macroura*
 Barn Owl, *Tyto alba*
 Great Horned Owl, *Bubo virginianus*
 Western Screech Owl, *Otus kennicottii*
 Northern Pygmy Owl, *Glaucidium gnoma*
 Northern Saw-whet Owl, *Aegolius acadicus*
 Anna's Hummingbird, *Calypte anna*
 Allen's Hummingbird, *Salasphorus sasin*
 Acorn Woodpecker, *Colaptes auratus*
 Downy Woodpecker, *Picoides pubescens*
 Hairy Woodpecker, *Picoides villosus*
 Olive-sided Flycatcher, *Contopus cooperi*
 Western Wood Pewee, *Contopus sordidulus*
 Pacific-slope Flycatcher, *Empidonax difficilis*
 Hutton's Vireo, *Vireo huttoni*
 Steller's Jay, *Cyanocitta stelleri*
 Western Scrub Jay, *Aphelocoma californica*
 American Crow, *Corvus brachyrhynchos*
 Common Raven, *Corvus corax*
 Violet Green Swallow, *Tachycineta thalassina*
 Wrentit, *Chamaea fasciata*
 Chestnut-backed Chickadee, *Poecile rufescens*
 Bushtit, *Psaltiriparus minimus*
 Brown Creeper, *Certhia americana*
 Pigmy Nuthatch, *Sitta pygmaea*
 Winter Wren, *Troglodytes troglodytes*
 Bewick's Wren, *Thryomanes bewickii*
 Swainson's Thrush, *Catharus ustulatus*

Hermit Thrush, *Catharus guttatus*
 Varied Thrush, *Ixoreus naevius*
 American Robin, *Turdus migratorius*
 California Thrasher, *Toxostoma curvirostre*
 European Starling, *Sturnus vulgaris*
 Orange-crowned Warbler, *Vermivora celata*
 Townsend's Warbler, *Dendroica townsendi*
 Wilson's Warbler, *Wilsonia pusilla*
 California Towhee, *Pipilo crissalis*
 Spotted Towhee, *Pipilo maculatus*
 Fox Sparrow, *Passerella iliaca*
 Song Sparrow, *Melospiza melodia*
 Dark-eyed Junco, *Junco hyemalis*
 Black-headed Grosbeak, *Pheucticus melanocephalus*
 Purple Finch, *Carpodacus purpureus*
 House Finch, *Carpodacus mexicanus*
 Pine Siskin, *Carduelis pinus*
 American Goldfinch, *Carduelis tristis*

Mammals Observed in the Mangels Ranch Area

Opossum, *Didelphis virginiana*
California mole, *Scapanus latimanus*
Shrew-mole, *Neilotrichus gibbsi*
Raccoon, *Procyon lotor*
Longtail Weasel, *Mustela frenata*
Striped Skunk, *Mephitis mephitis*
Coyote, *Canis latrans*
Bobcat, *Lynx rufus*
California Ground Squirrel, *Citellus beecheyi*
Western Gray Squirrel, *Sciurus griseus*
Eastern Fox Squirrel, *Sciurus niger*
Merriam Chipmunk, *Eutamia merriami*
Pocket Gopher, *Thomomys bottae*
Deer Mouse, *Peromyscus californicus*
Dusky-footed Woodrat, *Neotoma fuscipes*
California Vole, *Microtus californicus*
Brush Rabbit, *Sylvilagus bachmani*
European Pig, *Sus scrofa* (Feral, mix with domestic)
Mule Deer, *Odocoileus hemionus*

Amphibians and Reptiles Observed in Mangels Ranch area.

California Giant Salamander, *Dicamptodon ensatus*
California Newt, *Taricha torosa*
Ensatina, *Ensatina eschscholtzii*
Arboreal Salamander, *Aneides lugubris*
California Slender Salamander, *Batrachoseps attenuatus*
Pacific Treefrog, *Hyla regilla*
Red-legged Frog, *Rana aurora*
Western Fence Lizard, *Sceloporus occidentalis*
Northern Alligator Lizard, *Elgaria coerulea*
Rubber Boa, *Charina bottae*
Ring-necked Snake, *Diadophis punctatus*
Sharp-tailed Snake, *Contia tenuis*
Gopher Snake, *Pituophis catenifer*
Aquatic Garter Snake, *Thamnophis atratus*
Western Terrestrial Garter Snake, *Thamnophis elegans*

List of Species (cont)

Partial Listing of Native Plant Species Observed in the Mangels Ranch Area

Trees

Big-leaf Maple, *Acer macrophyllum*
 Coast Redwood, *Sequoia sempervirens*
 California Bay, *Umbellularia californica*
 California Sycamore, *Platanus racemosa*
 Madrone, *Arbutus menziesii*
 Coast Live Oak, *Quercus agrifolia*
 Santa Cruz Oak, *Quercus padula*, var. *shrevei*
 Tanoak, *Lithocarpus densiflorus*
 Arroyo Willow, *Salix lasiolepis*
 Douglas Fir, *Pseudotsuga menziesii*

Shrubs and Understory Low Vegetation

Deer Brush, *Ceanothus integerrimus*
 California hazelnut, *Corylus cornuta*
 Coyote Brush, *Baccharis pilularis*
 California Coffeeberry, *Rhamnus californica*
 Oso Berry, *Osmaronia cerasiformis*
 California Huckleberry, *Vaccinium ovatum*
 Blue Elderberry, *Sambucus mexicana*
 Cow Parsnip, *Heracleum lanatum*
 Pink-flowering Currant, *Ribes sanguineum*
 Sticky Monkeyflower, *Mimulus aurantiacus*
 California Sage, *Artemisia californica*
 Thimbleberry, *Rubus parviflorus*
 California Blackberry, *Rubus ursinus*
 Ground Rose, *Rosa gymnocarpa*
 Poison Oak, *Toxicodendron diversiloba*
 Wild Cucumber, *Marah fabaceus*
 Creeping Wild Ginger, *Asarum caudatum*
 Bracken Fern, *Pteridium aquilum*
 Lady Fern, *Athyrium filix-femina*
 Wood Fern, *Dryopteris arguta*
 Polypodium sp.
 Giant Chain Fern, *Woodwardia fimbriata*
 Western Sword Fern, *Polystichum munitum*
 Hoary Nettle, *Urtica dioica*

Hairy Honeysuckle, *Lonicera hispidula*
 Gold-backed Fern, *Pentagramma triangularis*
 Western Flat-topped Goldenrod, *Euthamia occidentalis*

Flowering Plants

Blue-eyed grass, *Sisyrinchium bellum*
 Milk Maids, *Cardamine californica*
 Hounds Tongue, *Cynoglossum grande*
 Blue Witch, *Solanum umbelliferum*
 Douglas Nightshade, *Solanum douglasii*
 Common Nightshade, *Solanum americanum*
 Yellow Violet, *Viola glabella*
 Butter and eggs, *Triphysaria eriantha*
 Golden Brodiaea, *Brodiea lutea*
 Harvest Brodiaea, *Brodiea elegans*
 California Dandelion, *Agoseris grandiflora*
 Hedge-nettle, *Stachys ajugoides*
 Yellow Mariposa, *Calochortus luteus*
 California Poppy, *Eschscholzia californica*
 Woodland Strawberry, *Fragaria fresca*
 Red Clintonia, *Clintonia andrewsiana*
 Owls-clover, *Castilleja densiflora*
 Hooker's Fairy Bell, *Disporum hookeri*
 Long-tubed Iris, *Iris macrosiphon*
 Western Flat-topped Goldenrod, *Eriophyllum confertiflorum*
 Western Morning-glory, *Calystegia occidentalis*

APPENDIX III

Brief Biography and Some Publications by Daniel J. Miller

Born June 19, 1925 Turlock Cal.

High School: Washington High, San Francisco 1942

U.C. Berkeley 1942 -1943

Army 10th Mountain Div. Medical Aid Man . Italy 1943-45

U.C. Berkeley, Wildlife Conservation under Aldo Starker Leopold. 1945- 1949

California Dept Fish and Game

Inland Fisheries at Castle Lake, Mt. Shasta area 1949

Game Department on Gallinaceous guzzlers in desert -1949 -1950

Marine Fisheries - Retired as Senior Marine Biologist 1950-1983

After retirement - social action and volunteer lecturing on "Environment and Population" in schools from 1993 - present.

Citation from page 10.

Miller, Daniel J., and Daniel Gotshall. 1965. Ocean Sportfish Catch and Effort from Oregon to Point Arguello, California (July 1, 1957-June 30-1961). California Department of Fish and Game, Fish. Bull. 130. 135p.

Other publications by the author:

Ocean Fishing Maps for all the counties from Del Norte to Santa Barbara. These were printed by the Resources Agency. They included fishing types and places and coastal state parks and their facilities. They are now out of print because of the changes in facilities and access.

Miller, Daniel J. and Robert N. Lea. 1972. Guide to Coastal Marine Fishes of California. California Department of Fish and Game. Marine Resources Region. Fish. Bull. 157. 235 p (This field guide has been the key marine fish identification book for marine fish courses in universities along the west coast.)

Miller, Daniel J., and John J. Geibel. 1973. Summary of Blue Rockfish and Lingcod Life Histories; a Reef Ecology Study; and Giant Kelp, *Macrocystis pyrifera*, Experiments in Monterey Bay, California. Fish. Bull. 158. 137 p, California Department of Fish and Game.

Miller, Daniel J. 2000. 76 p. HUMAN POPULATION AND THE ENVIRONMENT - For Students and Teachers. This was written and published by myself and distributed to 120 teachers in Santa Cruz county for a school contest. There are copies in Santa Cruz County public libraries.

APPENDIX IV Percentage Slope Information

Examples of percent slope data are given to demonstrate the changing slopes of most trails. Trails with fragile soil such as in The Forest of Nisene Marks can be eroded by all causes compared to areas where the soil consists of more consolidated structure and without pockets of unconsolidated sand. Deposits of clay are prevalent in the Mangels Ranch Area. The causes of trail degradation are natural water runoff and seepage, debris flows, wear by vehicle tires which includes bicycles, horses hooves, and human feet. Slope information is necessary for trail management because there is a direct increase in trail erosion with greater slope.

1. Wilderness Trail, Mangels Ranch 2940 ft (linear length, not topo plane survey). The figures are percent slope for each 5 ft. increase in height for the central most eroded area showing pockets of steepness which corresponded to the degree of trail degradation. The trail may be abandoned through this area and a bypass trail constructed.

Starting at marker 50 (1000 ft) on Wilderness Trail ending at marker 100 (2000 ft).
Percent Slope per 5ft height interval increase # 1 Figure 5:

11, 13, 5, 12, 13, 14, 14, 10, 12, 14, 21, 19, 17, 18, 21, 12, 11, 18, 14, 11, 14, 10, 6

2. Hawk Point Trail from Aptos Creek Road to Hawk point, 2900 ft. All slope percentages given. Climb 370 ft., distance 2900 ft. # 2 Figure 5:

26, 27, 29, 15, 11, 8, 29, 17, 27, 17, 22, 7, 21, 20, 14, 17, 26, 24, 18, 14, 16, 24, 18, 20, 22, 20, 15, 19, 13, 13, 13, 11, 10, 10, 15, 26, 16, 9, 15, 21, 12, 11, 26, 25, 5, 3, 8, 11, 7, 6, 7, 8, 12, 27, 16, 35, 17, 23, 20, 17, 14, 13, 15, 15, 15, 11, 14, 15, 18, 4, 19, 24, 13, 13

3. Aptos Creek to Split Stuff trail (near Kiosk) 980 ft, 85 ft. climb. (280 ft level or less than 5% slope). This is a dangerous trail because of its very steep areas in wet soil. The users are starting an unofficial bypass trail which is a little safer. Needs attention.
3 Figure 3:

14, 27, 16, 27, 25, 33, 8, 10, 23, 6, 7, 32, 25, 11, 10

On Rancho Aptos Trail between intersection of trail to Pourroy picnic area to where it joins Split Stuff trail. Eroded old dirt roadway. 340 ft. length, 45 ft height. # 4 Fig. 3

8, 38, 12, 16, 26, 19, 16, 14, 19

5. Aptos creek crossing of Vienna Woods Trail to Aptos Creek Road. 600 ft. climb 85 ft. This is a highly eroded area in semiconsolidated sandstone # 5 Figure 3:

11, 25, 13, 15, 20, 24, 13, 27, 16, 18, 22, 17, 12, 9, 10, 18, 20, 28